No. 1—AUGUST 1951

	Page
On the etiology of some human cancers. JOHANNES CLEMMESEN	1
The production of hepatic tumors in rats ingesting various concentrations of *p*–dimethylaminoazobenzene. JULIUS WHITE and ROSEMARY R. HEIN	23
Function of transplantable tumors of the thyroid gland in C3H mice. S. H. WOLLMAN, H. P. MORRIS, and C. D. GREEN	27
The intracellular distribution of cathepsin, benzoylarginine amidase and leucine amidase activities in normal rat tissues and primary rat hepatoma. MARY E. MAVER and ANTOINETTE E. GRECO	37
Studies of various tests for malignant neoplastic diseases. VI. Tests for the least coagulable serum protein and the iodoacetate index. LESTER D. ELLERBROOK, E. COLTON MEEK, and STUART W. LIPPINCOTT	49
Relation of cortisone-induced lymphopenia to transplanted sarcoma in hamsters. EDWARD D. CRABB and MARGARET A. KELSALL. [Plates 1–4]	91
Studies on the blood supply of tumors in man. III. Vascular patterns of the liver by hepatic arteriography *in vivo*. HOWARD R. BIERMAN, RALPH L. BYRON, JR., K[illegible]TH H. KELLY, and ALICE GRADY. [Plates 5–11]	107
The influence of inoculum size on proliferation in tissue cultures. WILTON R. EARLE, KATHERINE K. SANFORD, VIRGINIA J. EVANS, HELEN K. WALTZ, and JOHN E. SHANNON, JR. [Plates 12–15]	133
Qualitative comparison of the growth of chick-heart and strain L fibroblasts planted as suspensions on pyrex glass and perforated cellophane substrates. JOHN. E. SHANNON, JR., and WILTON R. EARLE. [Plates 16–20]	155
Growth of animal tissue cells on three-dimensional substrates. WILTON R. EARLE, EDWARD L. SCHILLING, and JOHN E. SHANNON, JR. [Plates 21–23]	179
Blood pentolysis in rats bearing induced sarcomas: An evaluation. STEPHEN N. STEEN	195
Modification of irradiation injury in mice and guinea pigs by bone marrow injections. EGON LORENZ, DELTA UPHOFF, T. R. REID, and EMMA SHELTON	197
Proceedings of the Histochemical Society, Business Meeting	205
Index of Authors	207
Scientific Proceedings	209
A quantitative histochemical method for the determination of zinc and its application to studies on the gastric mucosa. B. G. MALMSTROM and D. GLICK	209
A new method of preventing the leaching of radioactive isotopes and other substances from tissues prepared for histologic sections. H. BLANK, P. L. MCCARTHY, and C. JACOBSON	210
The development of a new freezing-dehydrating procedure and its applications in the cytology of microorganisms. E. D. DELAMATER	211
Histochemical studies on tissues prepared by the freezing-drying technique and chemical fixatives. HISAKO O. YOKOYAMA and R. E. STOWELL	211
Histochemical observations of the human fallopian tube. D. W. FAWCETT and G. B. WISLOCKI	213
The spectral absorption characteristics of methylene blue bound to fibrin. M. SINGER, J. M. WEISS, and E. W. DEMPSEY	215
The demonstration of glycogen in human liver by the electron microscope. P. C. MORGAN and R. W. MOWRY	216
Aging of elastic fibers. A. I. LANSING	217
Microspectrophotometric studies of the feulgen and arginine histochemical reactions. C. R. HOOVER and L. E. THOMAS	219

Histochemical Society (Scientific Proceedings)—Continued Page

Sakaguchi tube test for arginine applied to histochemistry. T. N. Warren and J. F. A. McManus 223

A histochemical method of demonstrating mobile components with urea localization as an example. D. E. Copeland 224

Histochemical cholesterol test (Liebermann-Burchard) of lipids of vascular and other tissues of the body in arteriolonephrosclerosis. R. D. Baker and E. Selikoff 225

A new histochemical technique for lipids applied to plasmal. M. H. Hack 225

Histochemical demonstration of active carbonyl groups in normal and neoplastic tissues. A. M. Seligman, Rivka Ashbel, and R. B. Cohen ... 226

Modification of the Hotchkiss spot test to be used as a guide for the histochemical interpretation of the periodic acid-fuchsin sulfurous acid technique. R. Glegg, Y. Clermont, and C. P. Leblond 228

Investigations on the histochemical demonstration of carbohydrates by the periodic acid-Schiff method. J. F. A. McManus and C. Hochligeti 228

Histochemical comparison of the $KMnO_4$, CrO_3 and HIO_4 oxidation-Schiff techniques. R. D. Lillie 229

Effectiveness of Schiff variants in the periodic-Schiff and Feulgen nucleal techniques. J. Longley and R. D. Lillie 230

The nucleoproteins of normal and irradiated onion cells. H. Swift and Ellen M. Rasch 232

The effect of X-rays on desoxypentose nucleic acid *in situ*. Quantitative cytochemical studies on *Trillium erectum*. M. J. Moses, R. DuBow, and A. H. Sparrow 232

Polysteny in salivary-gland chromosomes. N. B. Kurnick and I. H. Herskowitz 235

Differentiation of desoxypentose nucleoproteins by means of aldehyde coupling reagents. M. A. Lessler 237

Further studies on the differential extraction of nucleic acids from mammalian nerve cells with perchloric acid. H. Koenig and H. Stahlecker 237

Nuclear metachromasy. W. H. Carnes, N. Weissman, and P. S. Rubin. 240

A microspectrophotometric analysis of metachromatic staining of nucleic acids in tissues. M. H. Flax and M. H. Himes 240

Resistance of ribonucleic acid to basic staining and ribonuclease in human liver. A. W. Pollister, J. Post, J. G. Benton, and R. Breakstone .. 242

Behavior of the sex-influenced chromatin during restoration of Nissl material following chromatolysis. H. A. Lindsay, Yvonne J. Ferguson, and M. L. Barr 244

Electron microscopic studies of cytoplasmic components of some of the cells of the liver, pancreas, stomach, and kidney following treatment with ribonuclease. A. J. Dalton and M. J. Striebich 244

Studies on the effect of certain enzyme inhibitors on the histochemical localization of esterases. W. L. Hard and M. D. Fox 245

Histochemistry of esterases. G. Gomori 246

Tetrazolium and neotetrazolium as indicators of sites of dehydrogenases in bacteria. S. Mudd, A. F. Brodie, and L. C. Winterscheid 248

Activation and diffusion phenomena in the histochemical method for alkaline phosphatase. Elizabeth H. Leduc and E. W. Dempsey 249

The intracellular distribution of alkaline phosphatase in normal and regenerating liver of the rat. A. B. Novikoff 252

Quantitative estimation of alkaline phosphatase activity in tissue sections. E. B. Taft and J. F. Scott 253

Alkaline phosphatase and lipid content of normal and leishmania-infected hamster adrenal glands. J. H. Leathem and L. A. Stauber 253

Histochemical Society (Scientific Proceedings)—Continued Page

Demonstration of Golgi zones by three different histochemical techniques for carbohydrates. J. P. Arzac and L. G. Flores 254

The distribution of acetal lipids in the adult white rat. W. D. Belt and E. R. Hayes 254

The chemical nature of the materials retained in radioautographic preparations of thyroid glands of rats after radioiodine administration. R. Bogoroch, M. Israelovitch, and C. P. Leblond 255

Prostatic phosphatase in an infant with adrenogenital syndrome. G. W. Changus, W. L. Williams, and R. H. Fennell 255

The elimination of enzyme diffusion artifacts in the histochemical localization of cholinesterases. G. B. Koelle 256

The reflecting microscope and cellular microspectroscopy in the ultraviolet, and infrared regions. R. C. Mellors 256

Polysaccharide as a concomitant of alkaline phosphatase activity. Florence Moog and Eleanor Lerner Wenger 256

Absorption spectrum of the Feulgen-nucleal complex *in vitro* and *in situ*. M. J. Moses 257

The histochemistry of the harderian gland of the rabbit. E. S. Schneir and E. R. Hayes 257

Some histochemical properties of mast cells and tissue eosinophils in stained spreads of normal rat mesentery. G. B. Wislocki and D. W. Fawcett. 258

No. 2—OCTOBER 1951

The metabolism of Hodgkin's disease tissue. H. Laser 259

The effect of triethylene melamine, aureomycin, and some 4-amino derivatives of folic acid on tissues *in vitro*. Grace Antikajian, Louis T. Wright, Jewel I. Plummer, and Solomon Weintraub 269

Histology of early reactions of skin and mucous membrane of the lip of the mouse to a single application of a carcinogen. Barnet M. Levy, Robert Gorlin, and Robert Gottsegen. [Plates 24–26] 275

Fertility and cancer of the breast and of the uterine cervix. Comparisons between rates of pregnancy in women with cancer at these and other sites. Alexander G. Gilliam 287

Chemotherapy of tumors in rats. I. The treatment of Sarcoma 231 in the King A rat with 2,4,6-triethylenimino-s-triazine and related products. M. L. Crossley, J. B. Allison, W. W. Wainio, and J. B. Muenzen 305

Electrophoretically determined blood-protein levels in a case of acute myelogenous leukemia under exchange transfusion treatment. F. J. Gutter, J. R. Krevans, G. A. Moulton, and G. Kegeles 323

On the participation of two enzyme systems in melanin production *in vitro* by melanotic and amelanotic tumors of mice. M. L. Hesselbach 337

Tumor development in backcross mice segregated with respect to the hairless and the pink-eye genes. W. E. Heston and Margaret K. Deringer 361

Failure of bile as abetting agent for 20-methylcholanthrene in induction of gastric tumors in mice. Claude R. Hitchcock. [Plates 27–34] 369

Vascular reactions of normal and malignant tissues *in vivo*. IV. The effect of peripheral hypotension on transplanted tumors. Glenn H. Algire and Frances Y. Legallais. [Plates 35–40] 399

The conversion of L-valine to glycogen and carbon dioxide in rats receiving *p*-dimethylaminoazobenzene. William S. Fones and Julius White 423

Further observations on inhibition of lymphoid tumor development by shielding and partial-body irradiation of mice. Henry S. Kaplan and Mary B. Brown 427

Spontaneous and induced tumors in haired and hairless strain HR mice. Margaret K. Deringer 437

Dose-response relations in experimental transmission of avian erythromyeloblastic leukosis. I. Host-response to the virus. EDWARD A. ECKERT, DOROTHY BEARD, and J. W. BEARD ..... Page 447

No. 3—DECEMBER 1951

Cytochemistry and morphology of neoplastic and nonneoplastic human lymph node cells with special reference to Hodgkin's disease. G. ADOLPH ACKERMAN, RALPH A. KNOUFF, and HERMAN A. HOSTER. [Plates 41, 42] 465
Histopathogenesis of squamous-cell carcinoma induced in the forestomach of mice by intramural injection of 20-methylcholanthrene. HARLAN I. FIRMINGER and HAROLD L. STEWART. [Plates 43–56] 491
The 30-day LD-50 of two radiations of different ion density. JOANNE WEIKEL HOLLCROFT and EGON LORENZ 533
A sponge matrix method for tissue culture. Formation of organized aggregates of cells *in vitro*. JOSEPH LEIGHTON. [Plates 57–61] 545
Influence of glass and cellophane substrates on proliferation of strain L cells in tissue culture. WILTON R. EARLE, VIRGINIA J. EVANS, KATHERINE K. SANFORD, JOHN E. SHANNON, JR., and HELEN K. WALTZ 563
Role of the chemotherapy research laboratory in clinical cancer research. M. J. SHEAR 569
Metabolism of N^{15}-labeled *p*-dimethylaminoazobenzene in rats. M. BERENBOM and J. WHITE 583
Histology and cytochemistry of human skin. I. Metachromasia in the mons pubis. WILLIAM MONTAGNA, HERMAN B. CHASE, and HELEN P. MELARAGNO. [Plate 62] 591
Myelogenous leukemia in the cat. WILLARD HALSEY EYESTONE. [Plates 63–66] 599
Histological effects of long-continued whole-body gamma-irradiation of mice. B. SPARGO, J. R. BLOOMFIELD, D. J. GLOTZER, E. LEITER GORDON, and O. NICHOLS. [Plates 67, 68] 615
Paper partition chromatography of free amino acids and peptides of normal human gastric juice. D. ROURKE GILLIGAN, J. ROTHWELL MOOR, and SHIELDS WARREN 657
Paper partition chromatography of amino acids of gastric juice of patients with gastric lesions. SHIELDS WARREN, D. ROURKE GILLIGAN, and J. ROTHWELL MOOR 677
Paper partition chromatography of free amino acids and peptides of normal human saliva. J. ROTHWELL MOOR and D. ROURKE GILLIGAN 691
Announcement: Exchange Fellowships in Cancer Research 699

No. 4—FEBRUARY 1952

Studies on the blood supply of tumors in man. IV. The increased oxygen content of venous blood draining neoplasms. HOWARD R. BIERMAN, KEITH H. KELLY, and GRACE SINGER 701
Incidence of tumors in isogenic strains. WALTER J. BURDETTE 709
Cytologic study of the gastric aspirate for carcinoma cells: Paraffin-block technic. ARNOLD WOLLUM, DANIEL F. GLASER, HENRY C. BRYANT, and H. MARVIN POLLARD 715
Failure of eugenol and heat to potentiate gastric tumor induction by 20-methylcholanthrene in mice. CLAUDE R. HITCHCOCK. [Plates 69–71] 723
The action of methylcholanthrene, croton oil, and 1,2-benzanthracene in the induction of skin tumors in strain DBA mice. MICHAEL KLEIN 735
Spontaneous pulmonary tumor in the rat: report of a lesion. HELEN A. HORN and HAROLD L. STEWART. [Plates 72, 73] 743

Page

Factors modifying the effect of X-irradiation on regression of a transplanted lymphosarcoma. JOANNE WEIKEL HOLLCROFT, EGON LORENZ, and MARION MATTHEWS 751

Mortality of mice after total-body irradiation as influenced by alterations in total dose, fractionation, and periodicity of treatment. HENRY S. KAPLAN and MARY B. BROWN 765

Acute necrotizing renal papillitis experimentally produced in rats fed mono-N-methylaniline. JULIUS WHITE and PABLO MORI-CHAVEZ. [Plates 74–76] 777

Increase in incidence of leukemia in hybrid mice bearing thymic transplants from a high leukemic strain. L. W. LAW. [Plates 77–80] 789

The effect of guanazolo on antibody formation. R. A. MALMGREN, B. E. BENNISON, and T. W. MCKINLEY 807

Studies on the transmission of the mouse mammary tumor agent by the male parent. O. MÜHLBOCK 819

The effect of local injections of adrenalin on epidermal carcinogenesis in the mouse. A. C. RITCHIE 839

The effect of arterial occlusion on epidermal carcinogenesis in the rabbit. A. C. RITCHIE 847

The influence of cortisone acetate upon the growth of a transplanted rhabdomyosarcoma in C3H mice. GEORGE M. HIGGINS and WARREN A. BENNETT [Plate 81] 851

Studies of various tests for malignant neoplastic diseases. VII. Serum inhibitors of chymotrypsin and trypsin. ANDREW C. PEACOCK and JOHN J. SHEEHY 861

Ovarian tumorigenesis following intrasplenic transplantation of ovaries from weanling, young adult, and senile mice. MICHAEL KLEIN 877

Further studies on metastasis of a transplantable mouse mammary carcinoma after Roentgen irradiation. CARL F. VON ESSEN and HENRY S. KAPLAN 883

Proliferative lesions resembling chordoma following puncture of the nucleus pulposus in rabbits. CHARLES C. CONGDON. [Plates 82–85] 893

Inheritance of low liver glucuronidase activity in the mouse. L. W. LAW, ANDREW G. MORROW, and EZRA M. GREENSPAN 909

Acid and alkaline phosphatase of serum and hepatic tissue of rats fed carcinogens. AMBADAS S. MULAY and HARLAN I. FIRMINGER 917

Metabolism of L-histidine-2-C^{14} in the normal and the hepatoma-bearing rat. JAMES C. REID, MARTHA O. LANDEFELD, and JANE L. SIMPSON 929

No. 5—APRIL 1952

Complement fixation in animal neoplasia. II. Development and duration of the reaction in New Zealand white rabbits carrying Brown-Pearce carcinoma. LESTER D. ELLERBROOK, MARK C. RHEES, HELEN THORNTON, and STUART W. LIPPINCOTT 937

Studies on an acites (reticuloendothelial cell?) sarcoma of the rat. TOMIZO YOSHIDA. [Plates 86–89] 947

Studies on the oxidase activity of normal and malignant lymphoid tissues. MAYNARD A. STEINBERG, KURT G. STERN, and ANTONIO ROTTINO. [Plates 90, 91] 971

Studies on the biological interrelationships of folic acid, citrovorum factor, and the antimetabolite, aminopterin. ABRAHAM GOLDIN, EZRA M. GREENSPAN, JOHN M. VENDITTI, and EMANUEL B. SCHOENBACH 987

The transplacental effect of urethan on lung tumorigenesis in mice. MICHAEL KLEIN 1003

Induced adaptation in a tumor: Permanence of the change. MORRIS K. BARRETT and MARGARET K. DERINGER 1011

Tumors of the glandular stomach induced in rats by intramural injection of 20-methylcholanthrene. WILLIAM V. HARE, HAROLD L. STEWART, JAMES G. BENNETT, and EGON LORENZ. [Plates 92–103] 1019

204096—52——2

Page

The production of sarcomas from cultured tissues of hepatoma, melanoma, and thyroid tumors. KATHERINE K. SANFORD, GWENDOLYN D. LIKELY, VIRGINIA J. EVANS, CONSTANCE J. MACKEY, and WILTON R. EARLE. [Plates 104–108] 1057

Growth and histopathology of melanotic and amelanotic derivatives of the Cloudman melanoma S91. PROSPER LOUSTALOT, GLENN H. ALGIRE, FRANCES Y. LEGALLAIS, and BELLE F. ANDERSON. [Plates 109–120] 1079

The flexed-tail-anemia gene (*f*) and induced leukemia in mice. L. W. LAW ... 1119

Transfer of the mammary tumor milk agent from implant to host. RICHMOND T. PREHN 1127

Interrelation of specific genes, body weight, and development of tumors in mice. W. E. HESTON, MARGARET K. DERINGER, INA R. HUGHES, and JEROME CORNFIELD 1141

No. 6—JUNE 1952

Glycogen in the epidermis of mice painted with methylcholanthrene. THOMAS S. ARGYRIS. [Plates 121, 122] 1159

Electron microscopic study of the Shope papilloma virus. HERBERT KAHLER and B. J. LLOYD, JR. [Plates 123, 124] 1167

Rôle of the adrenal glands in the hematopoietic and thymicolymphatic reponse of the rat to podophyllotoxin. M. G. KELLY, J. LEITER, O. GHOSH, and P. K. SMITH. [Plates 125–129] 1177

Origin and behavior of two transplantable lymphomas induced by X radiation. EMMA SHELTON. [Plates 130–135] 1203

A study of a urine extract test for cancer. JOHN L. FARRINGER, JR. 1225

Studies on experimental carcinogenesis in the colon and rectum of the rat. JOHN LAURENS and HARRY E. BACON. [Plate 136] 1237

The growth *in vitro* of massive cultures of liver cells. VIRGINIA J. EVANS, WILTON R. EARLE, ELIZABETH P. WILSON, HELEN K. WALTZ, and CONSTANCE J. MACKEY. [Plates 137–141] 1245

Cytochemistry and morphology of human lymph node cells grown *in vitro*. G. ADOLPH ACKERMAN, RALPH A. KNOUFF, and HERMAN A. HOSTER 1267

Vascular reactions of normal and malignant tissues *in vivo*. V. The rôle of hypotension in the action of a bacterial polysaccharide on tumors. GLENN H. ALGIRE, FRANCES Y. LEGALLAIS, and BELLE F. ANDERSON. [Plates 142, 143] 1279

Pulmonary adenomatosis in mice. HELEN A. HORN, CHARLES C. CONGDON, ALLEN B. ESCHENBRENNER, HOWARD B. ANDERVONT, and HAROLD L. STEWART. [Plates 144–149] 1297

The infection of cells in tissue culture with Rous sarcoma virus. KATHERINE K. SANFORD, GWENDOLYN D. LIKELY, W. RAY BRYAN, and WILTON R. EARLE. [Plates 150–153] 1317

Studies on the Nematode parasite, *Gongylonema neoplasticum* (*Spiroptera neoplasticum*), and avitaminosis A in the forestomach of rats: comparison with Fibiger's results. CLAUDE R. HITCHCOCK and E. T. BELL. [Plates 154–165] 1345

Tumor lipoids 1389

Part I. Preparation of a serologically active nonsaponifiable fraction of liver of cancer-bearing patients. HARRY S. PENN.

Part II. Clinical evaluation of a serologically active nonsaponifiable fraction of liver of cancer-bearing patients. GEORGE C. HALL, ANDREW H. DOWDY, HARRY S. PENN, and ALBERT W. BELLAMY.

Index of authors, Volume 12 1417

Index of subjects, Volume 12 1425